

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

## (i) APPLICANT:

5

(A) NAME: PIERRE FABRE MEDICAMENT  
 (B) STREET: 17, AVENUE JEAN MOULIN  
 (C) CITY: CASTRES  
 (E) COUNTRY: FRANCE  
 (F) POSTAL CODE: 81106

10 (ii) TITLE OF INVENTION: IMMUNOGENIC ELEMENT, IMMUNOGENIC  
 AGENT, PHARMACEUTICAL COMPOSITION AND PREPARATION PROCESS.

(iii) NUMBER OF SEQUENCES: 75

## (iv) COMPUTER READABLE FORM:

15

(A) MEDIUM TYPE: Floppy disk  
 (B) COMPUTER: IBM PC compatible  
 (C) OPERATING SYSTEM: PC-DOS/MS-DOS

## (vi) DATA OF THE LAST APPLICATION:

(A) NUMBER OF THE APPLICATION: FR 94 04009  
 (B) FILING DATE: APRIL 06 1994

Information for SEQ ID NO: 1 G2A

20 SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - Thr Val Lys Thr Lys Asn Thr Thr Thr Thr Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys  
 5' - ACC GIG AAA ACC AAA AAC ACC ACC ACC ACC CAG ACC CAG CCG ACC AAA CCG ACC ACC AAA

150

Gln Arg Gln Asn Lys Pro Pro Asn Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe  
 CAG CGT CAG AAC AAA CCG CCG AAC AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC  
 171 173 176 182 186

Val Pro Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn  
 GIG CCG TGC ACC ACC ACC AAC AAC CCG ACC TGC TGG GCG ACC TGC AAA CGT ACC CCG AAC  
 192

Lys Lys Pro Gly Lys Lys Thr Thr Thr Lys Pro Thr Lys Lys Pro Thr Phe Lys Thr Thr Lys  
 AAA AAA CCG GGC AAA AAA ACC ACC ACC AAA CCG ACC AAA AAA CCG ACC TTC AAA ACC ACC AAA  
 213 230

Lys Asp His Lys Pro Gln Thr Thr Lys Pro Lys Glu Val Pro Thr Thr Lys Pro - C  
 AAA GAT CAT AAA CCG CAG ACC ACC AAA CCG AAA GAA GIG CCG ACC ACC AAA CCG - 3'

Information for SEQ ID NO: 2 G2B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

130  
N - Thr Ala Gln Thr Lys Gly Arg Ile Thr Thr Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys  
5'- ACC GCG CAG ACC AAA GGC CGT ATC ACC ACC ACC ACC CAG ACC AAC AAA CCG AGC ACC AAA  
150  
Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe  
ACC CGT ACC AAA AAC CCG CCG AAA AAA CCG AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC  
171 173 176 182 186  
Val Pro Cys Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser  
GIG CCG TGC ACC ATC TGC GGC AAC AAC CAG CCG TGC AAA AGC ATC TGC AAA ACC ATC CCG ACC  
192  
Asn Lys Pro Lys Lys Lys Pro Thr Ile Lys Pro Thr Asn Lys Pro Thr Thr Lys Thr Thr Asn  
AAC AAA CCG AAA AAG AAA CCG ACC ATC AAA CCG ACC AAC AAA CCG ACC ACC ACC ACC AAC  
213 230  
Lys Arg Asp Pro Lys Thr Pro Ala Lys Met Pro Lys Lys Glu Ile Ile Thr Asn - C  
AAA CGT GAT CCG AAA ACC CCG GCG AAA ATG CCG AAG AAG GAA ATC ATC ACC AAC - 3'

Information for SEQ ID NO: 3 G2AδCys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130  
N - Thr Val Lys Thr Lys Asn Thr Thr Thr Thr Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys  
5'- ACC GIG AAA ACC AAA AAC ACC AGC ACC ACC CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA

150  
 Gln Arg Gln Asn Lys Pro Pro Asn Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe  
 CAG CGT CAG AAC AAA CCG CCG AAC AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC  
 171 173 176 182 186  
 Val Pro Ser Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn  
 GTG CCG AGC AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG CCG ATC AGC AAA CGT ATC CCG AAC  
 192  
 Lys Lys Pro Gly Lys Lys Thr Thr Thr Lys Pro Thr Lys Lys Pro Thr Phe Lys Thr Thr Lys  
 AAA AAA CCG GGC AAA AAA ACC AGC ACC AAA CCG ACC AAA AAA CCG ACC TTC AAA ACC ACC AAA  
 213 230  
 Lys Asp His Lys Pro Gln Thr Thr Lys Pro Lys Glu Val Pro Thr Thr Lys Pro - C  
 AAA GAT CAT AAA CCG CAG ACC ACC AAA CCG AAA GAA GTG CCG ACC ACC AAA CCG - 3'

Information for SEQ ID NO: 4 G2B5Cys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

130  
 N - Thr Ala Gln Thr Lys Gly Arg Ile Thr Thr Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys  
 5' - ACC CCG CAG ACC AAA GGC CGT ATC ACC ACC AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA  
 150  
 Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe  
 AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC  
 171 173 176 182 186  
 Val Pro Ser Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser  
 GTG CCG AGC AGC ATC TGC GGC AAC AAC CAG CCG TGC AAA AGC ATC AGC AAA ACC ATC CCG AGC  
 192  
 Asn Lys Pro Lys Lys Lys Pro Thr Ile Lys Pro Thr Asn Lys Pro Thr Thr Lys Thr Thr Asn  
 AAC AAA CCG AAA AAG AAA CCG ACC ATC AAA CCG ACC AAC AAA CCG ACC ACC AAA ACC ACC AAC  
 213 230  
 Lys Arg Asp Pro Lys Thr Pro Ala Lys Met Pro Lys Lys Glu Ile Ile Thr Asn - C  
 AAA CGT GAT CCG AAA ACC CCG CCG AAA ATG CCG AAG AAG GAA ATC ATC ACC AAC - 3'

Information for SEQ ID NO: 5 GLACys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys - C  
5'- AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG GCG ATC TGC AAA - 3'

Information for SEQ ID NO: 6 GLBCys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys - C  
5'- AGC ATC TGC GGC AAC AAC CCG CTG TGC AAA AGC ATC TGC AAA - 3'

Information for SEQ ID NO: 7 GLA

SEQUENCE TYPE: amino acids and nucleotides

15 SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys - C  
5'- AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA - 3'

Information for SEQ ID NO: 8 G1B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

5 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys - C  
5'- AGC ATC TGC GGC AAC AAC CAG CCG TGC AAA AGC ATC AGC AAA - 3'

Information for SEQ ID NO: 9 G1'A

SEQUENCE TYPE: amino acids

10 SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Cys Lys - C

Information for SEQ ID NO: 10 G1'B

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Cys Lys - C

Information for SEQ ID NO: 11 G1'AδC

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Ser Lys - C

Information for SEQ ID NO: 12 G1'BδC

SEQUENCE TYPE: amino acids

15 SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Ser Lys - C

Information for SEQ ID NO: 13 P40

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 335 amino acids, 1005 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

P40 = N -Ala Pro Lys Asp Asn Thr Trp Tyr Ala Gly Gly Lys Leu Gly Trp Ser  
GCT CCG AAA GAT AAC ACC TGG TAT GCA GGT GGT AAA CTG GGT TGG TCC

17

Gln Tyr His Asp Thr Gly Phe Tyr Gly Asn Gly Phe Gln Asn Asn Asn Gly Pro  
CAG TAT CAC GAC ACC GGT TTC TAC GGT AAC GGT TTC CAG AAC AAC AAC GGT CCG

35

Thr Arg Asn Asp Gln Leu Gly Ala Gly Ala Phe Gly Gly Tyr Gln Val Asn Pro  
ACC CGT AAC GAT CAG CTT GGT GCT GGT CCG TTC GGT GGT TAC CAG GTT AAC CCG

53

Tyr Leu Gly Phe Glu Met Gly Tyr Asp Trp Leu Gly Arg Met Ala Tyr Lys Gly  
TAC CTC GGT TTC GAA ATG GGT TAT GAC TGG CTG GGC CGT ATG GCA TAT AAA GGC

71

Ser Val Asp Asn Gly Ala Phe Lys Ala Gln Gly Val Gln Leu Thr Ala Lys Leu  
ACC GTT GAC AAC GGT GCT TTC AAA GCT CAG GGC GTT CAG CTG ACC GCT AAA CTG

89

Gly Tyr Pro Ile Thr Asp Asp Leu Asp Ile Tyr Thr Arg Leu Gly Gly Met Val  
GGT TAC CCG ATC ACT GAC GAT CTG GAC ATC TAC ACC CGT CTG GGC GGC ATG GTT

107

Trp Arg Ala Asp Ser Lys Gly Asn Tyr Ala Ser Thr Gly Val Ser Arg Ser Glu  
TGG CCG GCT GAC TCC AAA GGC AAC TAC GCT TCT ACC GGC GTT TCC CGT AGC GAA

125

His Asp Thr Gly Val Ser Pro Val Phe Ala Gly Gly Val Glu Trp Ala Val Thr  
CAC GAC ACT CCG GTT TCC CCA GTA TTT GCT GGC GGC GTA GAG TGG GCT GTT ACT

143

Arg Asp Ile Ala Thr Arg Leu Glu Tyr Gln Trp Val Asn Asn Ile Gly Asp Ala  
CGT GAC ATC GCT ACC CGT CTG GAA TAC CAG TGG GTT AAC AAC ATC GGC GAC GCG

161

Gly Thr Val Gly Thr Arg Pro Asp Asn Gly Met Leu Ser Leu Gly Val Ser Tyr  
GGC ACT GCG GGT ACC CGT CTT GAT AAC GGC ATG CTG AGC CTG GGC GTT TCC TAC

179

Arg Phe Gly Gln Glu Asp Ala Ala Pro Val Val Ala Pro Ala Pro Ala Pro Ala  
CGC TTC GGT CAG GAA GAT GCT CCA CCG GTT GTT GCT CCG GCT CCG GCT CCG GCT

197  
 Pro Glu Val Ala Thr Lys His Phe Thr Leu Lys Ser Asp Val Leu Phe Asn Phe  
 CCG GAA GTG GCT ACC AAG CAC TTC ACC CCG AAG TCT GAC GTT CTG TTC AAC TTC  
 215  
 Asn Lys Ala Thr Leu Lys Pro Glu Gly Gln Gln Ala Leu Asp Gln Leu Tyr Thr  
 AAC AAA GCT ACC CCG AAA CCG GAA GGT CAG CAG GCT CCG GAT CAG CTG TAC ACT  
 233  
 Gln Leu Ser Asn Met Asp Pro Lys Asp Gly Ser Ala Val Val Leu Gly Tyr Thr  
 CAG CTG ACC AAC ATG GAT CCG AAA GAC GGT TCC GCT GTT GTT CCG GGC TAC ACC  
 251  
 Asp Arg Ile Gly Ser Glu Ala Tyr Asn Gln Gln Leu Ser Glu Lys Arg Ala Gln  
 GAC CCG ATC GGT TCC GAA GCT TAC AAC CAG CAG CTG TCT GAG AAA CGT GCT CAG  
 269  
 Ser Val Val Asp Tyr Leu Val Ala Lys Gly Ile Pro Ala Gly Lys Ile Ser Ala  
 TCC GTT GTT GAC TAC CTG GTT GCT AAA GGC ATC CCG GCT GGC AAA ATC TCC GCT  
 287  
 Arg Gly Met Gly Glu Ser Asn Pro Val Thr Gly Asn Thr Cys Asp Asn Val Lys  
 CCG GGC ATG GGT GAA TCC AAC CCG GTT ACT GGC AAC ACC TGT GAC AAC GTG AAA  
 305  
 Ala Arg Ala Ala Leu Ile Asp Cys Leu Ala Pro Asp Arg Arg Val Glu Ile Glu  
 GCT CCG GCT GCT CCG ATC GAT TCC CCG GCT CCG GAT CGT CGT GTA GAG ATC GAA  
 323  
 Val Lys Gly Tyr Lys Glu Val Val Thr Gln Pro Ala Gly TER - C  
 335  
 GGT AAA GGC TAC AAA GAA GTT GTA ACT CAG CCG CCG GGT TAA - 3'

Information for SEQ ID NO: 14 G2AδCF

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

130  
 N - Thr Val Lys Thr Lys Asn Thr Thr Thr Thr Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys  
 5'- ACC GIG AAA ACC AAA AAC ACC ATG ACC ACC CAG ACC CAG CCG ACC AAA CCG ACC ACC AAA  
 150  
 Gln Arg Thr Asn Lys Pro Pro Asn Lys Pro Asn Asn Asp Ser His Ser Glu Val Ser Asn Ser  
 CAG CGT CAG AAC AAA CCG CCG AAC AAA CCG AAC AAC GAT TCC CAT TCC GAA GIG TCC AAC TCC  
 171 173 176 182 186  
 Val Pro Ser Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn  
 GIG CCG ACC ACC ATC TGC ACC AAC AAC CCG ACC TCC TGG CCG ATC ACC AAA CGT ATC CCG AAC  
 192  
 Lys Lys Pro Gly Lys Lys Thr Thr Thr Lys Pro Thr Lys Lys Pro Thr Phe Lys Thr Thr Lys  
 AAA AAA CCG GGC AAA AAA ACC ATG ACC AAA CCG ACC AAA AAA CCG ACC TTC AAA ACC ACC AAA



213  
Lys Asp His Lys Pro Gln Thr Thr Lys Pro Lys Glu Val Pro Thr Thr Lys Pro - C  
AAA GAT CAT AAA CCG CAG ACC ACC AAA CCG AAA GAA GIG CCG ACC ACC AAA CCG - 3'

Information for SEQ ID NO: 15 G4A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 42 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys - C  
5'- GIG CCG TGC AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG GCG ATC TGC AAA - 3'

Information for SEQ ID NO: 16 G4AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 42 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Ser Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys - C  
5'- GIG CCG AGC AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA - 3'

Information for SEQ ID NO: 17 G4B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 42 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Cys Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys - C  
5' -GIG CTT TGC AGC ATC TGC GGC AAC AAC CAG CTG TGC AAA AGC ATC TGC AAA - 3'

Information for SEQ ID NO: 18 G4BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 42 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Ser Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys - C  
5' -GIG CTT AGC AGC ATC TGC GGC AAC AAC CAG CTG TGC AAA AGC ATC AGC AAA - 3'

Information for SEQ ID NO: 19 G4'A

SEQUENCE TYPE: amino acids

15 SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Asp Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Orn Lys - C

Information for SEQ ID NO: 20 G4'A5C

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Ser Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Ser Lys - C

Information for SEQ ID NO: 21 G4'B

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Asp Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Orn Lys - C

Information for SEQ ID NO: 22 G4'B5C

SEQUENCE TYPE: amino acids

15 SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Ser Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Ser Lys - C

Information for SEQ ID NO: 23 G200A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GIG CCG TGC AGC ATC TGC  
177 182 186  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro Gly  
AGC AAC AAC CCG ACC TGC TGG GCG ATC TGC AAA CGT ATC CCG AAC AAA AAA CCG GGC  
196 200  
Lys Lys Thr Thr Thr - C  
AAA AAA ACC ACG ACC - 3'

Information for SEQ ID NO: 24 G198A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GIG CCG TGC AGC ATC TGC  
177 182 186  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro Gly  
AGC AAC AAC CCG ACC TGC TGG GCG ATC TGC AAA CGT ATC CCG AAC AAA AAA CCG GGC  
196 198  
Lys Lys Thr - C  
AAA AAA ACC - 3'

Information for SEQ ID NO: 25 G196A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5' - CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG TGC AGC ATC TGC  
177 182 186  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro Gly  
AGC AAC AAC CCG ACC TGC TGG GCG ATC TGC AAA CGT ATC CCG AAC AAA AAA CCG GCG  
196  
Lys - C  
AAA - 3'

Information for SEQ ID NO: 26 G194A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5' - CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG TGC AGC ATC TGC  
177 182 186 194  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro - C  
AGC AAC AAC CCG ACC TGC TGG GCG ATC TGC AAA CGT ATC CCG AAC AAA AAA CCG - 3'

Information for SEQ ID NO: 27 G192A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 52 amino acids, 156 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG TGC AGC ATC TGC  
177 182 186 192  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys - C  
AGC AAC AAC CCG ACC TGC TGG GIG ATC TGC AAA CGT ATC CCG AAC AAA - 3'

Information for SEQ ID NO: 28 G6A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC G GIG TTC AAC TTC GIG CCG TGC AGC ATC TGC  
177 182 186 190  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro - C  
AGC AAC AAC CCG ACC TGC TGG GIG ATC TGC AAA CGT ATC CCG - 3'

Information for SEQ ID NO: 29 G7A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

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      158                                     173
N - Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile
5'- AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG TGC AGC ATC
      176               182               186               190
Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro - C
TGC AGC AAC AAC CCG ACC TGC TGG GIG ATC TGC AAA CGT ATC CCG - 3'

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Information for SEQ ID NO: 30 G200AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

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      140
N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC
      158                                     173               176
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys
AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC
      177               182               186
Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro Gly
AGC AAC AAC CCG ACC TGC TGG GIG ATC AGC AAA CGT ATC CCG AAC AAA AAA CCG GGC
      196               200
Lys Lys Thr Thr Thr - C
AAA AAA ACC ACC ACC - 3'

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Information for SEQ ID NO: 31 G198A6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
158 173 176  
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys  
AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GTG CCG AGC AGC ATC TGC  
177 182 186  
Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro Gly  
AGC AAC AAC CCG ACC TGC TGG CCG ATC AGC AAA CGT ATC CCG AAC AAA AAA CCG GGC  
196 198  
Lys Lys Thr - C  
AAA AAA ACC - 3'

Information for SEQ ID NO: 32 G196A6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC



158 173 176  
 Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys  
 AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC  
 177 182 186  
 Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro Gly  
 AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA CGT ATC CCG AAC AAA AAA CCG GGC  
 196  
 Lys - C  
 AAA - 3'

Information for SEQ ID NO: 33 G194AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
 N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
 5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC  
 158 173 176  
 Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys  
 AAA CCG AAC AAC GAT TTC CAT TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC  
 177 182 186 194  
 Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro - C  
 AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA CGT ATC CCG AAC AAA AAA CCG - 3'

Information for SEQ ID NO: 34 G192AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 52 amino acids, 156 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140  
 N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn  
 5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC

```

158                                     173       176
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys
AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GTG CCG AGC AGC ATC TGC
177               182               186               192
Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys - C
AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA CGT ATC CCG AAC AAA - 3'

```

Information for SEQ ID NO: 35 G6AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 50 amino acids, 150 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

```

140
N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn
5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC
158                                     173       176
Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys
AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GTG CCG AGC AGC ATC TGC
177               182               186               190
Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro - C
AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA CGT ATC CCG - 3'

```

Information for SEQ ID NO: 36 G7AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

```

158                                     173
N - Lys Pro Asn Asn Asn Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile
5'- AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GTG CCG AGC AGC ATC

```

Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro - C  
TGC AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA CGT ATC CCG - 3'

Information for SEQ ID NO: 37 G200B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

**MOLECULE TYPE:** protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5' - ACC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG TGC AGC ATC TGC CCG AAC AAC CAG  
182 186 200  
Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Lys Pro Thr Ile- C  
CTG TGC AAA AGC ATC TGC AAA ACC ATC CCG AGC AAC AAA CCG AAA AAG AAA CCG ACC ATC- 3'

Information for SEQ ID NO: 38 G198B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

10 STRANDEDNESS: single

**TOPOLOGY:** linear

**MOLECULE TYPE:** protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5' - AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GTC TTC AAC TTC GTC CCG TGC AGC ATC TGC GGC AAC AAC CAG  
182 186 198  
Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Lys Pro - C  
CTG TGC AAA AGC ATC TGC AAA ACC ATC CCG AGC AAC AAA CCG AAA AAG AAA CCG - 3'

Information for SEQ ID NO: 39 G196B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
 5' - AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
 150 173 176  
 Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln  
 AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCG TGC AGC ATC TGC GGC AAC AAC CAG  
 182 186 196  
 Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys - C  
 CTG TGC AAA AGC ATC TGC AAA ACC ATC CCG AGC AAC AAA CCG AAA AAG - 3'

Information for SEQ ID NO: 40 G194B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
 5' - AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
 150 173 176  
 Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln  
 AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCG TGC AGC ATC TGC GGC AAC AAC CAG  
 182 186 194  
 Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn Lys Pro - C  
 CTG TGC AAA AGC ATC TGC AAA ACC ATC CCG AGC AAC AAA CCG - 3'

Information for SEQ ID NO: 41 G192B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCC TGC AGC ATC TGC GGC AAC AAC CAG  
182 186 192  
Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn - C  
CTG TGC AAA AGC ATC TGC AAA ACC ATC CCG AGC AAC - 3'

Information for SEQ ID NO: 42 G6B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCC TGC AGC ATC TGC GGC AAC AAC CAG  
182 186 190  
Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro - C  
CTG TGC AAA AGC ATC TGC AAA ACC ATC CCG - 3'

Information for SEQ ID NO: 43 G7B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

```

158                                     173       176
N - Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly
5'- AAA CCG AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG TGC AGC ATC TGC GGC
      182             186             190
Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro - C
AAC AAC CAG CIG TGC AAA AGC ATC TGC AAA AGC ATC CCG - 3'

```

Information for SEQ ID NO: 44 G200B6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

```

140
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro
5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG
150                                     173       176
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC GGC AAC AAC CAG
      182             186             200
Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Lys Pro Thr Ile- C
CIG TGC AAA AGC ATC AGC AAA ACC ATC CCG AGC AAC AAA CCG AAA AGG AAA CCG ACC ATC- 3'

```

Information for SEQ ID NO: 45 G198B6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5' - AGC ACC CCG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC GGC AAC AAC CAG  
182 186 198  
Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Lys Pro - C  
CTG TGC AAA AGC ATC AGC AAA ACC ATC CCG AGC AAC AAA CCG AAA AAG AAA CCG - 3'

Information for SEQ ID NO: 46 G198B6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5' - AGC ACC CCG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC GGC AAC AAC CAG  
182 186 196  
Leu Lys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys - C  
CTG TGC AAA AGC ATC AGC AAA ACC ATC CCG AGC AAC AAA CCG AAA AAG - 3'

Information for SEQ ID NO: 47 G194BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC GGC AAC AAC CAG  
182 186 194  
Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro - C  
CIG TGC AAA AGC ATC AGC AAA ACC ATC CCG AGC AAC AAA CCG - 3'

Information for SEQ ID NO: 48 G192BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GIG TTC AAC TTC GIG CCG AGC AGC ATC TGC GGC AAC AAC CAG  
182 186 192  
Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn - C  
CIG TGC AAA AGC ATC AGC AAA ACC ATC CCG AGC AAC - 3'



Information for SEQ ID NO: 49 G6BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro  
5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA AGC CGT AGC AAA AAC CCG CCG AAA AAA CCG  
160 173 176  
Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln  
AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCG AGC AGC ATC TGC GGC AAC AAC CAG  
182 186 190  
Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro - C  
CIG TGC AAA AGC ATC AGC AAA ACC ATC CCG - 3'

Information for SEQ ID NO: 50 G7BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

158 173 176  
N - Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly  
5'- AAA CCG AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCG AGC AGC ATC TGC GGC  
182 186 190  
Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro - C  
AAC AAC CAG CIG TGC AAA AGC ATC AGC AAA ACC ATC CCG - 3'

Information for SEQ ID NO: 51 G2V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - Gln Asn Arg Lys Ile Lys Gly Gln Ser Thr Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn  
5'- CAA AAC AGA AAA ATC AAA GGT CAA TCA ACA CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT  
150

Pro Ser Gly Ser Ile Pro Pro Glu Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr  
CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT  
171 173 176 182 186

Val Pro Cys Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu  
GTT CCC TGC AGT ACA TGT GAA GGT AAT CIT GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG GAA  
192

Arg Ala Pro Ser Arg Ala Pro Thr Ile Thr Leu Lys Lys Thr Pro Lys Pro Lys Thr Thr Lys  
AGA GCA CCA AGC AGA GCA CCA ACA ATC ACC CTC AAA AAG ACA CCA AAA CCA AAA ACC ACA AAA  
213 230

Lys Pro Thr Lys Thr Thr Ile His His Arg Thr Ser Pro Glu Thr Lys Leu Gln - C  
AAG CCA ACC AAG ACA ACA ATC CAT CAC AGA ACC AGC CCA GAA ACC AAA CTG CAA - 3'

Information for SEQ ID NO: 52 G2VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - Gln Asn Arg Lys Ile Lys Gly Gln Ser Thr Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn  
5'- CAA AAC AGA AAA ATC AAA GGT CAA TCA ACA CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT

150  
 Pro Ser Gly Ser Ile Pro Pro Glu Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr  
 CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT  
 171 173 176 182 186  
 Val Pro Ser Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu  
 GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG GAA  
 192  
 Arg Ala Pro Ser Arg Ala Pro Thr Ile Thr Leu Lys Lys Thr Pro Lys Pro Lys Thr Thr Lys  
 AGA GCA CCA AGC AGA GCA CCA ACA ATC ACC CTC AAA AAG ACA CCA AAA CCA AAA ACC ACA AAA  
 213 230  
 Lys Pro Thr Lys Thr Thr Ile His His Arg Thr Ser Pro Glu Thr Lys Leu Gln - C  
 AAG CCA ACC AAG ACA ACA ATC CAT CAC AGA ACC AGC CCA GAA ACC AAA CTG CAA - 3'

Information for SEQ ID NO: 53 G200V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
 N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
 5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
 160 173 176  
 Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu  
 CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC TGC AGT ACA TGT GAA GGT AAT CTT  
 182 186 200  
 Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro Ser Arg Ala Pro Thr Ile - C  
 GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG GAA AGA GCA CCA AGC AGA GCA CCA ACA ATC - 3'

Information for SEQ ID NO: 54 G198V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC TGC AGT ACA TGT GAA GGT AAT CTT  
182 186 198  
Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro Ser Arg Ala Pro - C  
GCA TGC TTA TCA CTC TGC CAT ATT GAG ACG GAA AGA GCA CCA AGC AGA GCA CCA - 3'

Information for SEQ ID NO: 55 G196V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC TGC AGT ACA TGT GAA GGT AAT CTT  
182 186 196  
Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro Ser Arg - C  
GCA TGC TTA TCA CTC TGC CAT ATT GAG ACG GAA AGA GCA CCA AGC AGA - 3'

Information for SEQ ID NO: 56 G194V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GGT CCC TGC AGT ACA TGT GAA GGT AAT CTT  
182 186 194  
Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro - C  
GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG GAA AGA GCA CCA - 3'

Information for SEQ ID NO: 57 G192V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 52 amino acids, 156 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GGT CCC TGC AGT ACA TGT GAA GGT AAT CTT  
182 186 192  
Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg - C  
GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG GAA AGA - 3'

Information for SEQ ID NO: 58 G6V

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

5 MOLECULE TYPE: protein

140  
N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu  
CAA GGC CAC AAC AAC TTC CAA ACA CTC CCC TAT GIT CCC TGC AGT ACA TGT GAA GGT AAT CTT  
182 186 190  
Ala Cys Leu Ser Leu Cys His Ile Glu Thr - C  
GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG - 3'

Information for SEQ ID NO: 59 G7V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

10 TOPOLOGY: linear

MOLECULE TYPE: protein

158 173 176  
N - Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys  
5'- AAC CAT CAA GGC CAC AAC AAC TTC CAA ACA CTC CCC TAT GT. CCC TGC AGT ACA TGT  
182 186 190  
Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His Ile Glu Thr - C  
GAA GGT AAT CTT GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG - 3'

Information for SEQ ID NO: 60 G200V6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CAC TAT GAT GTC AGC AGT ACA TGT GAA GGT AAT CTT  
182 186 200  
Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro Ser Arg Ala Pro Thr Ile - C  
GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG GAA AGA GCA CCA AGC AGA GCA CCA ACA ATC - 3'

Information for SEQ ID NO: 61 G198V6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CAC TAT GAT GTC AGC AGT ACA TGT GAA GGT AAT CTT  
182 186 198  
Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro Ser Arg Ala Pro - C  
GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG GAA AGA GCA CCA AGC AGA GCA CCA ACA ATC - 3'

Information for SEQ ID NO: 62 G196VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT  
182 186 196  
Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro Ser Arg - C  
GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG GAA AGA GCA CCA AGC AGA - 3'

Information for SEQ ID NO: 63 G198VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140  
N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT  
182 186 194  
Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro - C  
GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG GAA AGA GCA CCA - 3'



Information for SEQ ID NO: 64 G192VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 52 amino acids, 156 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT  
182 186 192  
Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg - C  
GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG GAA AGA - 3'

Information for SEQ ID NO: 65 G6VδC

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

10 TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His  
5'- CTA CCA GGC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT  
160 173 176  
Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu  
CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT  
182 186 190  
Ala Cys Leu Ser Leu Ser His Ile Glu Thr - C  
GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG - 3'

Information for SEQ ID NO: 66 G7V6C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: protein

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158                                     173       176
N - Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys
5'- AAC CTT CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC AGC AGT ACA TGT
      182             186             190
Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His Ile Glu Thr - C
GAA GGT AAT CTT GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG - 3'
```

Information for SEQ ID NO: 67 G4V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

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171       173       176             182             186 187
N - Val Pro Cys Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His - C
5'- GTT CCC TGC AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC TGC CAT - 3'
```

Information for SEQ ID NO: 68 G4VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Ser Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His - C  
5' - GGT CCG AGC AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC AGC CAT - 3'

Information for SEQ ID NO: 69 G4'V

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Asp Ser Thr Asp Glu Gly Asn Leu Ala Orn Leu Ser Leu Orn His - C

Information for SEQ ID NO: 70 G4'VδC

SEQUENCE TYPE: amino acids

15 SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187  
N - Val Pro Ser Ser Thr Asp Glu Gly Asn Leu Ala Orn Leu Ser Leu Ser His - C

Information for SEQ ID NO: 71 G1V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His - C  
5' - AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC TGC CAT - 3'

Information for SEQ ID NO: 72 G1VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids,

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His - C  
5' - AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC AGC CAT - 3'

Information for SEQ ID NO: 73 G1'V6C

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

5 TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187  
N - Ser Thr Asp Glu Gly Asn Leu Ala Orn Leu Ser Leu Ser His - C

Information for SEQ ID NO: 74 BB

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 219 amino acids, 657 nucleotides

10 STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

1  
BB = N - Lys Tyr Gly Val Ser Asp Tyr Tyr Lys Asn Leu Ile Asn Asn Ala Lys  
5'- AAA TAT GGA GTA AGT GAC TAT TAC AAG AAT CTA ATC AAC AAT GGC AAA

17  
Thr Val Glu Gly Val Lys Asp Leu Gln Ala Gln Val Val Glu Ser Ala Lys Lys  
ACT GIT GAA GGC GTA AAA GAC CIT CAA GCA CAA GIT GIT GAA TCA GCG AAG AAA

35  
Ala Arg Ile Ser Glu Ala Thr Asp Gly Leu Ser Asp Phe Leu Lys Ser Gln Thr  
GCG GGT ATT TCA GAA GCA ACA GAT GGC TTA TCT GAT TTC TTG AAA TCA CAA ACA

53  
Pro Ala Glu Asp Thr Val Lys Ser Ile Glu Leu Ala Glu Ala Lys Val Leu Ala  
CCT GCT GAA GAT ACT GIT AAA TCA ATT GAA TTA GCT GAA GCT AAA GTC TTA GCT

71

Asn Arg Glu Leu Asp Lys Tyr Gly Val Ser Asp Tyr His Lys Asn Leu Ile Asn  
AAC AGA GAA CIT GAC AAA TAT GGA GGA AGT GAC TAT CAC AAG AAC CTA ATC AAC

89

Asn Ala Lys Thr Val Glu Gly Val Lys Asp Leu Gln Ala Gln Val Val Glu Ser  
AAT GCC AAA ACT GGT GAA GGT GGA AAA GAC CIT CAA GCA CAA GTT GTT GAA TCA

107

Ala Lys Lys Ala Arg Ile Ser Glu Ala Thr Asp Gly Leu Ser Asp Phe Leu Lys  
GGG AAG AAA GCG CGT ATT TCA GAA GCA ACA GAT GGC TTA TCT GAT TTC TTG AAA

125

Ser Gln Thr Pro Ala Glu Asp Thr Val Lys Ser Ile Glu Leu Ala Glu Ala Lys  
TCA CAA ACA CCT GGT GAA GAT ACT GGT AAA TCA ATT GAA TTA GCT GAA GCT AAA

143

Val Leu Ala Asn Arg Glu Leu Asp Lys Tyr Gly Val Ser Asp Tyr Tyr Lys Asn  
GTC TTA CCT AAC AGA GAA CIT GAC AAA TAT GGA GGA AGT GAC TAT TAC AAG AAC

161

Leu Ile Asn Asn Ala Lys Thr Val Glu Gly Val Lys Ala Leu Ile Asp Glu Ile  
CTA ATC AAC AAT GCC AAA ACT GGT GAA GGT GGA AAA GCA CTG ATA GAT GAA ATT

179

Leu Ala Ala Leu Pro Lys Thr Asp Thr Tyr Lys Leu Ile Leu Asn Gly Lys Thr  
TTA GCT GCA TTA CCT AAG ACT GAC ACT TAC AAA TTA ATC CIT AAT GGT AAA ACA

197

Leu Lys Gly Glu Thr Thr Thr Glu Ala Val Asp Ala Ala Thr Ala Arg Ser Phe  
TTG AAA GGC GAA ACA ACT ACT GAA GCT GGT GAT GCT GCT ACT GCA AGA TCT TTC

215

219

Asn Phe Pro Ile Leu - C  
AAT TTC CCT ATC CTC - 3'

Information for SEQ ID NO: 75    δBB = fragment of BB

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 108 amino acids, 324 nucleotides

STRANDEDNESS: single

5    TOPOLOGY: linear

MOLECULE TYPE: protein

1  
888 = N -Lys Tyr Gly Val Ser Asp Tyr His Lys Asn Leu Ile Asn Asn Ala Lys  
5'- AAA TAT GGA GTA AGT GAC TAT CAC AAG AAC CTA ATC AAC AAT GTC AAA  
17  
Thr Val Glu Gly Val Lys Asp Leu Gln Ala Gln Val Val Glu Ser Ala Lys Lys  
ACT GGT GAA GGT GTA AAA GAC CTT CAA GCA CAA GTT GTT GAA TCA GCG AAG AAA  
35  
Ala Arg Ile Ser Glu Ala Thr Asp Gly Leu Ser Asp Phe Leu Lys Ser Gln Thr  
GCG CGT ATT TCA GAA GCA ACA GAT GGC TTA TCT GAT TTC TIG AAA TCA CAA ACA  
53  
Pro Ala Glu Asp Thr Val Lys Ser Ile Glu Leu Ala Glu Ala Lys Val Leu Ala  
CCT GCT GAA GAT ACT GTT AAA TCA ATT GAA TTA GCT GAA GCT AAA GTC TTA GCT  
71  
Asn Arg Glu Leu Asp Lys Tyr Gly Val Ser Asp Tyr Tyr Lys Asn Leu Ile Asn  
AAC AGA GAA CTT GAC AAA TAT GGA GTA AGT GAC TAT TAC AAG AAC CTA ATC AAC  
89  
Asn Ala Lys Thr Val Glu Gly Val Lys Ala Leu Ile Asp Glu Ile Leu Ala Ala  
AAT GTC AAA ACT GTT GAA GGT GTA AAA GCA CTG ATA GAT GAA ATT TTA GCT GCA  
107 108  
Leu Pro - C  
TTA CCT - 3'